

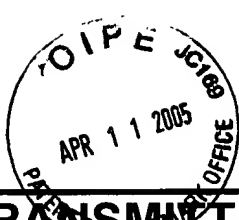
<b>TRANSMITTAL FORM</b> <i>(to be used for all correspondence after initial filing)</i>		Application No.	09/823,084
		Filing Date	March 29, 2001
		First Named Inventor	Christian R. Thomas
		Art Unit	3625
		Examiner Name	Garg, Yogesh C.
Total Number of Pages in This Submission	28	Attorney Docket Number	42390P10460

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form  <input checked="" type="checkbox"/> Fee Attached  <input type="checkbox"/> Amendment / Response  <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request  <input type="checkbox"/> Express Abandonment Request  <input type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> PTO/SB/08  <input type="checkbox"/> Certified Copy of Priority Document(s)  <input type="checkbox"/> Response to Missing Parts/Incomplete Application  <input type="checkbox"/> Basic Filing Fee <input type="checkbox"/> Declaration/POA  <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s)  <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition  <input type="checkbox"/> Petition to Convert a Provisional Application  <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address  <input type="checkbox"/> Terminal Disclaimer  <input type="checkbox"/> Request for Refund  <input type="checkbox"/> CD, Number of CD(s)  <div>Remarks</div>	<input type="checkbox"/> After Allowance Communication to Group  <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences  <input checked="" type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)  <input type="checkbox"/> Proprietary Information  <input type="checkbox"/> Status Letter  <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): <div>Return receipt postcard</div>

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Joseph Lutz, Reg. No. 43,765 BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Signature	
Date	April 08, 2005

CERTIFICATE OF MAILING/TRANSMISSION			
I hereby certify that this correspondence is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.			
Typed or printed name	Marilyn Bass		
Signature		Date	04-08-05

Based on PTO/SB/21 (04-04) as modified by Blakely, Solokoff, Taylor & Zafman (wir) 06/04/2004.  
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# FEE TRANSMITTAL for FY 2005

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT (\$)  
500.00

## Complete if Known

Application Number	09/823,084
Filing Date	March 29, 2001
First Named Inventor	Christian R. Thomas
Examiner Name	Garg, Yogesh C.
Art Unit	3625
Attorney Docket No.	42390P10460

## METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_

☒ Deposit Account Deposit Account Number: 02-2666 Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

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## FEE CALCULATION

### 1. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
20	21**	0	50.00
4	4**	0	200.00
Multiple Dependent			
Large Entity	Small Entity		
Fee Code	Fee (\$)	Fee Code	Fee (\$)
1202	50	2202	25
1201	200	2201	100
1203	360	2203	180
1204	300	2204	150
1205	300	2205	150
SUBTOTAL (1)		(\$)	0.00

\*\*or number previously paid, if greater, For Reissues, see below

### 2. ADDITIONAL FEES

Large Entity	Small Entity	Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)
1051	130	2051	65
1052	50	2052	25
2053	130	2053	130
1251	120	2251	60
1252	450	2252	225
1253	1,020	2253	510
1254	1,590	2254	795
1255	2,160	2255	1,080
1401	500	2401	250
1402	500	2402	250
1403	1,000	2403	500
1451	1,510	2451	1,510
1460	130	2460	130
1807	50	1807	50
1806	180	1806	180
1809	790	1809	395
1810	790	2810	395
SUBTOTAL (2)		(\$)	500.00

Other fee (specify)

## SUBMITTED BY

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Attorney's Docket No.: 42390P10460

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3625  
95

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application for:

**Christian R. Thomas, et al.**

Serial No.: 09/823,084

Filed: March 29, 2001

For: **DYNAMICALLY INTERACTING WITH  
AN INTERNET SERVICE USING A  
CLIENT-SPECIFIED COMMUNICATION  
PROXY AND PROTOCOL**

Examiner: Garg, Yogesh C.

Art Group: 3625

**APPEAL BRIEF**

Mail Stop Appeal Brief - Patent  
Commissioner for Patents  
P. O. 1450  
Alexandria, VA 22313-1450

Dear Sir:

Applicants submit the following Appeal Brief pursuant to 37 C.F.R. §41.37(c) for consideration by the Board of Patent Appeals and Interferences. Applicants also submit herewith a check in the amount of \$500.00 to cover the cost of filing the opening brief as required by 37 C.F.R. § 1.17(f). Please charge any additional amount due or credit any overpayment to deposit Account No. 02-2666.

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**I. REAL PARTY IN INTEREST**

Christian R. Thomas, Narasimha R. Edala and Joel I. Marcey, the parties named in the caption, transferred their rights to that which is disclosed in the subject application through an assignment recorded on March 29, 2001 (011676/0324) in the patent application to Intel Corporation, of Santa Clara, California. Thus, as the owner at the time the brief is being filed, Intel Corporation, of Santa Clara, California is the real party in interest.

**II. RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences which will affect or be affected by the outcome of this appeal.

**III. STATUS OF CLAIMS**

Claims 1-20 are pending. Claims 1-20 are rejected in this application. Applicants hereby appeal the rejection of rejected Claims 1-20.

**IV. STATUS OF AMENDMENTS**

The claims are amended in accordance with the Response Amendment filed on January 13, 2005, wherein Claim 1 was amended and Claim 21 was cancelled. The claim amendments and cancelled claim requested in the Response Amendment filed on January 13, 2005 regarding Claims 1-20, as amended, and cancelled Claim 21 were entered.

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

The pending claims relate to dynamically interacting with an Internet service using a communications proxy provided by a service provider matching a client-specified communication proxy type. As illustrated with reference to FIGS. 1, 2 and 5, Claim 1 recites a method including:

registering an Internet service with a broker 102;  
transmitting metadata, to the broker 102, describing at least one  
communication proxy 106, including at least one supported protocol, a type, and a  
location of the communication proxy 106; and  
accessing, by the communication proxy 106, a web server to provide the  
Internet service to a client 100 if the type of the communication proxy matches a  
communication proxy type specified by the client 100. (Emphasis added.)

As illustrated in FIGS. 1 and 2 of Applicants' specification, the client 100 interacts with the local communications proxy 106 at process block 212, while the communications proxy 105 interacts with the service 104 on behalf of the client 100, as indicated at process block 214.

FIGS. 1 and 5 illustrate registration with a broker 102 by a service 104, including metadata describing the service 104, any communications proxy 106 supporting various protocols, and any location of any proxy 106. At process block 502, the service 104 interacts with the client 100 by

interacting with the communication proxy 106, the communication proxy 106 being on the same node as the client 100.

Accordingly, Claim 1 recites features performed by a service provider to register a service 104 with a broker 102, such that access to the service 104 is provided via a communication proxy 106 provided by the service provider, assuming a type of the communications proxy 106 matches a communications proxy type specified by a client 100.

Claims 6 and 17 cite analogous claim features. Claim 6 is representative. As illustrated with reference to FIGS. 1-3, Claim 6 recites features including:

requesting a desired Internet service 104, by a client 100, to a broker 102, including a desired communication proxy type and, optionally, a desired application-level protocol;

receiving metadata from the broker 102 regarding a communication proxy 106 having at least a matching communication proxy type to the desired communication proxy type;

downloading the communication proxy 106 from a location specified by the metadata; and

interacting with a web server using the downloaded communication proxy 106 to receive the desired Internet service 104. (Emphasis added.)

Accordingly, as shown in process blocks 208-214 of FIG. 2, and process blocks 300-308 of FIG. 3, the client 100 downloads a communications proxy 106 to the client node, which is provided by the service provider. As indicated by process blocks 212 and 214 of FIG. 2, the client 100 interacts with the local communications proxy 106 at process block 212 and the communications proxy 106 interacts with the service 104 on behalf of the client 100 at process block 214. *See, also, process block 308 of FIG. 3.*

As illustrated in FIGS. 1 and 4 of Applicants' specification, Claim 13 recites a method including the following claim features:

receiving at least one Internet service registration 104 that includes metadata regarding at least one communication proxy 106;

receiving a request to locate a client-desired Internet service having a client-specified communication proxy type;

matching the request with the Internet service registration to identify a communications proxy 106 of the communication proxy type; and

transmitting metadata to the client 100, the metadata including at least a location of the identified communication proxy 106. (Emphasis added.)

As shown in process blocks 400-406 of FIG. 4 and described at ¶0016, pg. 6 of Applicants' specification, the Internet service registration received by a broker 102 includes metadata regarding at least one communication proxy 106. In addition, the client request received by the broker 102 for a client-desired Internet service includes a client-specified communication proxy type. As illustrated in FIG. 4, the broker 102 matches the client request with an Internet service registration to identify a communications proxy 106 of the communications proxy type and transmits metadata, including a location of the identified communication proxy 106.

As recited by dependent Claim 2, the communications proxy is downloaded from the location specified by the transmitted metadata to a node local to the client. As described with reference to Applicants' specification:

In an embodiment, the client downloads the requested communication proxy and dynamically interacts, at runtime, with an Internet service using the requested communication proxy, the communication proxy being local to the client. In an embodiment of the invention, a client application is executing, and during runtime the client is interacting with the communications proxy. (See, pg. 3, ¶005 of Applicants' specification.) (Emphasis added.)

As recited by dependent Claims 9 and 20, a client dynamically interacts with a web server using the downloaded communication proxy to receive the desired Internet service. As recited by Applicants' specification:

By "dynamically interact" it is meant, in an embodiment of the invention, that the client has no prior knowledge of what is needed to interact with an Internet service. In an embodiment of the invention, the client is relieved from having to develop a remote communications code. (See, pg. 3, ¶005 of Applicants' specification.) (Emphasis added.)

Accordingly, as recited by dependent Claim 8, the web server is remotely accessed by the downloaded communication proxy according to the client. (See, supra.)

## **VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection involved in this appeal are as follows:

Are Claims 1-20 unpatentable under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,594,700 issued to Graham ("Graham")?

## **VII. ARGUMENT**

### **A. Overview of the Cited References**

#### **1. Overview of Graham Reference**

Graham describes a system and method for implementing a universal service broker interchange mechanism (USBIM). The USBIM taught by Graham is directed to a new form of networking that involves dynamic networks of consumer devices, which unpredictably join and leave the network. As indicated by Graham:

A key aspect of making these networks easy to use is making them self-configuring, rendering them virtually transparent to the consumer. Service discovery protocols help make networks self-configuring. (col. 1, lines 24-28.) (Emphasis added.)

As further indicated by Graham:

The role of the service discovery protocol is to facilitate the service advertising and client lookup, and broker the service to the client. (col. 1, lines 44-46.)

As further described by Graham, conventional service discovery protocols do not allow clients operating under a first protocol to access services from a service provider operating according to a second protocol that is different than the first protocol. Accordingly, the teachings of Graham are directed to:

[A] system and method for facilitating the different protocols to work in harmony between client and server providers. It would also be advantageous to provide a system and method to enhance the usability of services having their own unique protocols and to maximize the number of clients that can utilize them. (col. 2, lines 7-13.) (Emphasis added.)

Accordingly, the USBIM taught by Graham offers solutions to allow interoperability of devices and services that implement different service discovery protocols. In contrast to the prior art, Graham teaches service provider protocol adapter servlets and client protocol adapter servlets. As taught by Graham:

Each protocol is associated with a different servlet that understands the details of the service advertising mechanism unique to that protocol. The unique protocol of the service provider is converted to a canonical representation of the service provider advertisement. (col. 6, lines 35-40.) (Emphasis added.)

Accordingly, as taught by Graham:

Each time a new service provider advertises a new service or updated service, service provider protocol adapter servlets 406 convert the service provider's unique protocol into a canonical representation and update internal registry 402 with the new service information . . . canonical representation is an important aspect of the present invention for providing interoperability among protocols. (col. 6, lines 42-57.) (Emphasis added.)

As further taught by Graham:

Client protocol adapter servlets 404, which function similarly to the service provider protocol adapter servlets 406, are componentized mechanisms based on servlets, that listen for client lookup requests. As with service provider protocol adapter servlets, a different client protocol adapter servlet handles the details of client lookup for each protocol. Client protocol adapter servlets convert the client request and the requesting client's protocol to a canonical representation of the request.

In addition, client protocol adapter servlets 404 also search internal registry 402 for the requested service advertisement in the index of service provider advertisements, and respond back to the requesting client with the results of the search using the client's requested protocol. (col. 7, lines 4-17.) (Emphasis added.)

Accordingly, the use of the client protocol adapter servlets, service provider protocol adapter servlets, and canonical representation of service provider advertisements and client requests, obviate the need for requiring clients and service providers to have a matching protocol. In other words, as explicitly recited by Graham:

In accordance with the preferred embodiment of the present invention, the protocols of the requester client and the service provider are unimportant. In the present invention, a client may have a protocol which is the same as or different from



that of the service provider because an interaction between the client and the service provider is brokered in a protocol-independent registry 402. (col. 6, lines 12-18.) (Emphasis added.)

Regarding the mechanism of client service provider interaction, Graham explicitly teaches that:

Associated with the client lookup mechanism is the ability to broker the mechanism of client-service provider interaction. (col. 7, lines 17-19.) (Emphasis added.)

Specifically, in an example provided by Graham regarding interaction between a UPnP protocol service and a Jini-based client, as is explicitly taught by Graham:

[I]t is the responsibility of the client servlet to generate a marshalledObject (analogous to a network device driver) that has an implementation of the appropriate Java interface corresponding to LPR:. (col. 7, lines 22-26.) (Emphasis added.)

In other words, as explicitly recited by Graham:

[T]he client protocol adapter servlet brokers an interchange mechanism between the requester client and the service provider. (col. 7, lines 32-34.) (Emphasis added.)

Referring again to the example provided by Graham:

In the case of brokering a UpnP-based service to a Jini client, this is accomplished by providing a Java interface and implementation based on the Service-:Name: protocol associated with the service provider to the requesting client. (col. 7, lines 34-38.) (Emphasis added.)

Accordingly, as taught by Graham, the ability of the client protocol adapter servlet to broker an interchange mechanism between the requester client and the service provider renders the protocols of the requester client and the service provider unimportant, since the client protocol adapter servlet will broker the interchange mechanism between the client and service for the client to receive the service provided by the service provider.

#### B. Rejection of Claims 1-5 as Anticipated by Graham

The Examiner rejected all pending claims, including Claims 1-5 under 35 U.S.C. §102(e) as being anticipated by Graham.

##### 1. Errors of Law and Fact in the Rejection

Applicants respectfully assert that the Examiner has failed to adequately set forth a *prima facie* rejection under 35 U.S.C. §102(e). “Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim*.” Lindemann Maschinenfabrik v. American Hoist & Derrick (“Lindemann”), 730 F.2d 452, 1458 (Fed. Cir. 1994)(emphasis added). Additionally, each and every element of the claim

must be exactly disclosed in the anticipatory reference. Titanium Metals Corp. of American v. Banner (“Banner Titanium”), 778 F.2d 775, 777 (Fed. Cir. 1985).

Although the Examiner has rejected Claims 1-5 as anticipated by Graham, the Examiner fails to show that each and every element of the claimed subject matter is disclosed in Graham, as required to establish a *prima facie* case of anticipation under §102(e). Id.

According to the Examiner, Graham (col. 6, lines 1-49) teaches the transmitting metadata, to the broker, describing at least one communication proxy, including at least one supported protocol, a type, and a location of the communication proxy, as recited by the claimed subject matter. (See, pg. 4, ¶6 of Final Office Action mailed November 12, 2004.) However, after careful review of the relevant portions of Graham cited by the Examiner, Applicants respectfully disagrees with the Examiner’s contention. According to the Examiner:

The information received from the service providers corresponds to transmitting metadata to broker and includes the type of communication proxy, that is adapter servlet required to convert the service provider’s protocol to a canonical representation, e.g., XML or SGML. (Also see col. 6, line 50 - col. 9., line 30.) (See, pg. 5, first paragraph of Final Office Action mailed November 12, 2004.)

Applicants respectfully submit that the Examiner has improperly equated the service provider protocol adapter servlets, as taught by Graham, with the communications proxy provided to a broker by a service provider, as recited by the claimed subject matter. In other words, Applicants respectfully submit that the Examiner is improperly equating the matching of client requested services with service providers providing the client requested service, which is referred to by Graham as the “client lookup mechanism,” (see, col. 7, lines 4-19) with the mechanism for interchange to provide client and service provider interaction once matching client and service providers have been found.

Specifically, as recited by Graham and illustrated with reference to FIG. 5:

The process begins by determining the service provider’s unique protocol and using the appropriate service provider protocol adapter servlet for the advertisement in the unique protocol of the service provider (step 502). Next, a check is made to determine whether a service provider protocol adapter servlet is available for the protocol (step 504). (col. 8, lines 7-13.) (Emphasis added.)

Based on the cited passage above, Applicants respectfully submit that the USBIM taught by Graham provides the service provider protocol adapter servlet, which the Examiner has improperly equated with the communications proxy, as recited by the claimed subject matter. However, in contrast to the Examiner’s contention:

The protocol adapter servlet is fundamental to the present invention, if a servlet does not exist for this specific service protocol, the process ends. (col. 8, lines 18-20.) (Emphasis added.)

Hence, based on the cited passages above, the Examiner's contention that the service provider provides the service provider protocol adapter servlet (which the Examiner equates to the communications proxy as recited by the claimed subject matter) is directly contrary to the explicit teachings of Graham. As taught by Graham, the USBIM is responsible for providing the service provider protocol adapter servlets; and hence, if a service provider adapter protocol servlet does not exist for a service provider, the process ends. (*See, Id.*)

Furthermore, according to the Examiner, Graham (col. 6, line 66 - col. 7, line 38) further teaches the accessing, by the communication proxy, a web server to provide the Internet service to a client if the communication proxy is compatible with the client requirement, as recited by the claimed subject matter. (*See, pg. 5, first paragraph of Final Office Action mailed November 12, 2004.*) However, after careful review of the relevant portions of Graham cited by the Examiner, Applicants respectfully disagrees with the Examiner's contention. According to the Examiner:

The adapter servlet, which corresponds to the communication proxy, is compatible with the client environment and enables the client to request a service using the client's protocol from a service provider. (*See, pp. 5-6 of Final Office Action mailed November 14, 2004.*)

Applicants respectfully submit that the Examiner has once again improperly equated the "client lookup mechanism" taught by Graham with the interaction mechanism between matching clients and service providers. Conversely, as recited by the claimed subject matter, the communications proxy provided by the service provider interacts with a web server to provide the Internet service to a client if the type of communication proxy provided by the service provider matches a communication proxy type specified by the client.

Accordingly, Applicants respectfully submit that although Graham teaches that the client protocol adapter servlet is responsible for the "client lookup mechanism", the client protocol adapter servlet is responsible for brokering the mechanism of client and service provider interaction; it is not responsible for providing the service to the client, as recited by the claimed subject matter; namely, as further taught by Graham, once the client lookup mechanism matches a client and a service provider:

Associated with the client lookup mechanism is the ability to broker the mechanism of client-service provider interaction. . . . [T]he client protocol adapter servlet brokers an interchange mechanism between the requester client and the service provider. (col. 7, lines 17-35.) (Emphasis added.)

Accordingly, Applicants respectfully submit that the entire specification of Graham is restricted to teaching:

Solutions to allow interoperability of devices and services that implement different service discovery protocols. (col. 2, lines 20-21.)

To this end, Graham explicitly states that:

[T]he protocols of the requester client and the service provider client are unimportant. In the present invention, a client may have a protocol which is the same as or different from that of the service provider because interaction between the client and service provider is brokered in a protocol-independent registry 402. (col. 6, lines 13-18.) (Emphasis added.)

Hence, Applicants respectfully submit that the teachings of Graham fail to disclose a communications proxy provided by a service provider, which interacts with a web server to provide a service to a client, as recited by the claimed subject matter. However, the case law is clear in establishing that each and every element of the claim must be exactly disclosed by the anticipatory reference. Id.

Therefore, Applicants respectfully submit that the failure of Graham to disclose each and every element recited by the claimed subject matter prohibits the Examiner's use of Graham as an anticipatory reference to establish a *prima facie* case of anticipation of Claim 8. Id. Therefore, a *prima facie* case of anticipation of Claims 1-5 has not been established and the rejection of Claims 1-5 is therefore erroneous. Id.

## 2. Specific Limitations Not Described in the Prior Art

Independent Claim 1 recites the following claim features, which are neither taught nor suggested by Graham or the references of record:

registering an Internet service with a broker;  
transmitting metadata, to the broker, describing at least one communication proxy, including at least one supported protocol, a type, and a location of the communication proxy; and  
accessing, by the communication proxy, a web server to provide the Internet service to a client if the type of the communication proxy matches a communication proxy type specified by the client. (Emphasis added.)

## 3. Explanation Why Such Limitations Render the Claims Unanticipated by the Prior Art

Applicants claim a method for dynamically interacting with an Internet service using a communications proxy specified by a service provider having a type that matches a communications proxy type requested by a client. As indicated by Applicants' specification and specifically, as illustrated with reference to FIGS. 1 and 2 of Applicants' specification:

Service 104 registers with Broker 102, transmits metadata describing any communication proxies, and provides attributes or keywords that describe the service as well as information pertaining to any communications proxies . . . Client 100 registers with Broker 102 to request and locate a desired service that provides a client-requested type of communication proxy and protocol . . . As shown in functional block 212, Client 100 interacts directly with local communication proxy 106 to communicate with Service 104. By "local" it is meant that Client 100 and proxy 106 share the same node. The interaction between Client 100 and Service 104 is simplified since Client 100 interacts only with the local component, the communications proxy . . . Since Service 104 provides communication proxy 106,

communication proxy 106 includes the necessary logic to connect and communicate with Service 104. (See, pg. 4, ¶007 - pg. 5, ¶0012 of Applicants' specification.) (Emphasis added.)

Accordingly, as recited by Claim 1, once a client and service provider are matched together (discovery), a communications proxy provided by the service provider is used by the client to interact with the service if the communications proxy type matches a communications proxy type specified by the client. In other words, as described with reference to Applicants' specification:

In an embodiment, the client downloads the requested communication proxy and dynamically interacts, at runtime, with an Internet service using the requested communication proxy, the communication proxy being local to the client. In an embodiment of the invention, a client application is executing, and during runtime the client is interacting with the communications proxy. By "dynamically interact" it is meant, in an embodiment of the invention, that the client has no prior knowledge of what is needed to interact with an Internet service. In an embodiment of the invention, the client is relieved from having to develop a remote communications code. (See, pg. 3, ¶0005 of Applicants' specification.) (Emphasis added.)

Conversely, Graham teaches a system and method for implementing a universal service broker interchange mechanism (USBIM). Graham is directed to a method including a service provider protocol adapter servlet (*see*, col. 6, lines 28-40) and a client protocol adapter servlet (*see*, col. 7, lines 4-12), which respectively listen for service advertisement and client lookup requests, which are converted into a canonical representation and stored within an internal registry. (*See*, col. 6, lines 50-65.)

Once a client request is converted into a canonical representation of the request, the client protocol adapter servlet uses the canonical representation of the request to look-up the service required by the client ("client lookup mechanism"). Once a match has been found, the client protocol adapter servlet brokers the interchange mechanism of client and service provider interaction. (*See*, col. 7, lines 13-19.) Accordingly, based on the cited passages above, Graham teaches service provider protocol adapter servlets, client protocol adapter servlets and an internal registry to provide a client lookup mechanism between clients and service providers with different service discovery protocols to provide a desired service to the client. As is specifically stated by Graham:

The present invention offers solutions to allow interoperability of devices and services that implement different service discovery protocols. (col. 2, lines 19-21.) (Emphasis added.)

Accordingly, since the USBIM allows interoperability of devices and services that implement different discovery protocols, Graham explicitly states that:

[T]he protocols of the requester client and the service provider are unimportant. In the present invention, a client may have a protocol which is the same as or different from that of the service provider because an interaction between

the client and the service provider is brokered in a protocol-independent internal registry 402. (col. 6, lines 13-18.) (Emphasis added.)

According to the Examiner:

The adapter servlet, which corresponds to the communications proxy, is compatible with the client environment and enables the client to request a service using the client's protocol from a service provider. (See, pg. 5, second paragraph of Final Office Action mailed November 12, 2004.)

According to the Examiner, accessing by the communications proxy, a web server to provide the Internet service to a client if the communications proxy is compatible with the client, is taught at col. 6, line 66 to col. 7, line 38 of Graham (see, pg. 5, first paragraph of Final Office Action mailed November 12, 2004). However, after careful review of the cited passages indicated by the Examiner, Applicants respectfully disagree with the Examiner's contention.

As explicitly described by Graham regarding the client protocol adapter servlet:

Associated with the client lookup mechanism is the ability to broker the mechanism of client, service provider interaction. (col. 7, lines 17-19.) (Emphasis added.)

As further described within Graham:

In effect, the client protocol adapter servlet brokers an interchange mechanism between the requester client and the service provider. In the case of brokering a UpnP-based service to a Jini client, this is accomplished by providing a Java interface and implementation based on the Service-:Name: protocol associated with the service provider to the requesting client. (col. 7, lines 32-38.) (Emphasis added.)

In other words, as specifically recited by Graham regarding the above example:

[I]t is the responsibility of the client servlet to generate a marshalledObject (analogous to a network device driver) that has an implementation of the appropriate Java interface corresponding to LPR:. (col. 7, lines 21-27.) (Emphasis added.)

Applicants respectfully submit that the above-cited passage is explicitly contrary and therefore does not disclose the recited features of Claim 1. Namely, as recited by Claim 1, the transmitting of metadata, which describes at least one communications proxy, a type, and a location of the communications proxy, is performed by the service provider. In other words, as recited by Claim 1, it is the duty of the service provider to provide the communications proxy, which will be used by the client to interact with a web server to receive the service provided by the service provider.

Conversely, Graham teaches that it is the responsibility of the client servlet to generate a marshalledObject to provide the mechanism of client and service provider interaction. (See, supra.) Hence, Applicants respectfully submit that although Graham teaches that a protocol of the client protocol adapter servlet must match a protocol of the client and that a protocol of the service provider protocol adapter servlet must match a protocol of the service provider, the

interchange mechanism brokered by the client protocol adapter servlet is not required to match a communications proxy type specified by a client, as recited by Claim 1.

Consequently, Applicants respectfully submit that the entire specification of Graham is devoid of any disclosure regarding a client-specified communications proxy type, which must be available from a service provider to match the client and service provider, as recited by Claim 1. Furthermore, Graham explicitly teaches that it is not the service provider that provides the communications proxy that a client will use to interact with a web server to receive the service provided by the service provider. As taught by Graham, the mechanism for interchange between the client and service provider is brokered by the client protocol adapter servlet. (See, supra.)

Yet, in spite of the lack of any disclosure regarding an interchange mechanism between a client and a service provider using a communications protocol provided by a service provider that matches a client-specified communications proxy type, as recited by Claim 1, the Examiner incorrectly finds that Graham discloses each and every element of Claim 1.

However, the case law is clear in establishing that each and every element of the claim must be exactly disclosed in the anticipatory reference. Id. Hence, Applicants respectfully submit that the failure of Graham to disclose each and every element recited by Claim 1 prohibits the Examiner's use of Graham as an anticipatory reference to establish a *prima facie* case of anticipation of Claim 1. Id.

Therefore, Applicants respectfully submit that a *prima facie* case of anticipation of Claims 1-5 is not established and rejection of Claims 1-5 is erroneous and should be overturned. Accordingly, Applicants respectfully request that the §102(e) rejection of Claims 1-5 be overturned.

C. Rejection of Claims 6, 10-12 and 17-19 as Anticipated by Graham

The Examiner rejected all pending claims, including Claims 6, 7, 10-12 and 17-19 under 35 U.S.C. §102(e) as being anticipated by Graham.

1. Errors of Law and Fact in the Rejection

The Examiner has made the same errors as previously described with respect to the rejection of Claims 1-5. Furthermore, although the Examiner has rejected Claims 6, 7, 10-12 and 17-19 as anticipated by Graham, the Examiner fails to show that each and every element of the claimed subject matter is disclosed in Graham, as required to establish a *prima facie* case of anticipation. Id.

According to the Examiner, Graham (col. 6, line 1 - col. 9, line 40) discloses interacting with a web server using the downloaded communication proxy to receive the desired Internet service (*see*, pg. 8, ¶ 2 of Final Office Action mailed November 12, 2004). However, after careful review of the relevant portions of Graham cited by the Examiner, Applicants respectfully disagree with the Examiner's contention.

As indicated by the Examiner at pg. 2, ¶1 of Advisory Action mailed February 15, 2005:

In Graham, as analyzed in the previous Office Action, communication proxies correspond to client adapter servlets 404.

Based on the cited passage above, Applicants respectfully submit that the Examiner has improperly equated client adapter servlets 404, as taught by Graham, with the downloaded communications proxy, as recited by Claims 6 and 17, which is used by the clients to interact with the web server to receive the desired Internet service.

Although the Examiner is correct in stating that the client protocol adapter servlet has to be compatible with the client's protocol (*see, supra* of Advisory Action mailed February 15, 2005), the client protocol adapter servlet referred to by the Examiner identifies a service provider that provides a service requested by the client. (*See*, col. 7, lines 4-17.) Graham refers to the matching of a client request with a requested service advertisement as the "client lookup mechanism." (*See*, col. 7, lines 4-12.)

As explicitly described by Graham regarding the client protocol adapter servlet:

Associated with the client lookup mechanism is the ability to broker the mechanism of client, service provider interaction. (col. 7, lines 17-19.) (Emphasis added.)

As further described within Graham:

In effect, the client protocol adapter servlet brokers an interchange mechanism between the requester client and the service provider client. (col. 7, lines 32-33.) (Emphasis added.)

In other words, as specifically described by Graham, in an example regarding the brokering of an interchange mechanism between the requester client and the service provider client:

[I]t is the responsibility of the client servlet to generate a marshalledObject (analogous to a network device driver) that has an implementation of the appropriate Java interface corresponding to LPR:. (col. 7, lines 21-27.) (Emphasis added.)

Accordingly, based on the cited passages above, Applicants respectfully submit that although the client protocol adapter servlet is responsible for brokering the mechanism of interchange between the client and service provider, the client protocol adapter servlet is not downloaded from a location specified by metadata received from a broker and is thus not used for interacting with the web server to receive the desired Internet service, as recited by Claims 6 and 17.

Hence, Applicants respectfully submit that the teachings of Graham are explicitly limited to a client protocol adapter servlet that performs a client lookup mechanism to match a client with the service provider that provides a matching service and subsequently brokers the interaction mechanism between the client and service provider. However, for at least the reasons indicated



above, the client protocol adapter servlet is neither downloaded nor used to access a web server to provide the desired Internet service to a client, as recited by the claimed subject matter.

Hence, Applicants respectfully submit that the client protocol adapter servlet, as taught by Graham, fails to disclose each and every element of the claimed subject matter. However, the case law is clear in establishing that each and every element of the claim must be exactly disclosed in the anticipatory reference. Id. Therefore, a *prima facie* case of anticipation of Claims 6 and 17 is not established, and the rejection of Claims 6, 7, 10-12, 17, 18 and 20 is therefore erroneous. Id.

## 2. Specific Limitations Not Described in the Prior Art

Claims 6 and 17 recite analogous claim features. Claim 6 is representative. Claim 6 recites:

requesting a desired Internet service, by a client, to a broker, including a desired communication proxy type and, optionally, a desired application-level protocol;  
receiving metadata from the broker regarding a communication proxy having at least a matching communication proxy type to the desired communication proxy type;  
downloading the communication proxy from a location specified by the metadata; and  
interacting with a web server using the downloaded communication proxy to receive the desired Internet service. (Emphasis added.)

## 3. Explanation Why Such Limitations Render the Claims Unanticipated by the Prior Art

Here, Graham fails to disclose the receipt of metadata from a broker regarding a communications proxy matching a desired communications proxy type and downloading of the communications proxy to enable interaction with the web server to receive a desired Internet service, as recited by Claims 6 and 17. In contrast, the teachings of Graham are limited to a service provider protocol adapter servlet for converting service advertisements from service providers into a canonical representation (*see*, col. 6, lines 42-57) and client adapter servlets to provide a client lookup mechanism to match a client request with a service provider according to the canonical representation within registry 402 (*see*, col. 7, lines 4-17).

Applicants respectfully submit that neither the client protocol adapter servlet nor the client protocol adapter servlet, as taught by Graham, are used to perform client service provider interaction, such as, for example, by downloading of the adapter servlet and interacting with the downloaded adapter servlet to receive a desired Internet service from a web server, as recited by the claimed subject matter.

Conversely, the teachings of Graham are explicitly limited to teaching that:

Associated with the client lookup mechanism is the ability to broker the mechanism of client and service provider interaction. (col. 7, lines 17-19.) (Emphasis added.)

Applicants respectfully submit that the brokering of client and service provider interaction, as provided by the client protocol adapter servlet, does not disclose the downloading of a communications proxy with a communications proxy type from a location specified by metadata received from a broker and interacting with a web server using the downloaded communications proxy to receive the desired Internet service, as recited by Claims 6 and 17.

However, the case law is clear in establishing that each and every element of the claim must be exactly disclosed by the anticipatory reference. *Id.* Therefore, Applicants respectfully submit that the failure of Graham to disclose each and every element recited by the claim prohibits the Examiner's use of Graham as an anticipatory reference to establish a *prima facie* case of anticipation of Claims 6 and 17. *Id.*

Therefore, Applicants respectfully submits that a *prima facie* case of anticipation of Claims 6, 7, 10-12 and 17-19 is not established and the rejection of Claims 6, 7, 10-12 and 17-19 are erroneous and should be overturned. Accordingly, Applicants respectfully request that the §102(e) rejection of Claims 6, 7, 10-12 and 17-19 be overturned.

D. Rejection of Claims 13-16 as Anticipated by Graham

The Examiner rejected all pending claims, including Claims 13-16 under 35 U.S.C. §102(e) as being anticipated by Graham.

1. Errors of Law and Fact in the Rejection

The Examiner has made the same errors as previously described with respect to the rejection of Claims 6, 7, 10-12 and 17-19. Furthermore, although the Examiner has rejected Claims 13-16 as anticipated by Graham, the Examiner fails to show that each and every element of the claimed subject matter is disclosed in Graham, as required to establish a *prima facie* case of anticipation. *Id.*

According to the Examiner:

Regarding Claims 13-20, their limitations are already covered in the Claims 1-12 above and are therefore analyzed and rejected based on the same rationale as being anticipated by Graham. (See, pg. 9, ¶1 of Final Office Action mailed November 12, 2004.)

Applicants respectfully submit that the features recited by Claim 13 are distinct from the features recited by Claims 1-12, as stated by the Examiner. (See, *supra*.) Applicants respectfully submit that the Examiner has improperly equated the client lookup mechanism performed by client protocol adapter servlets taught by Graham with the recited features of the claimed subject matter; namely, matching of a request to locate a client-desired Internet service with

an Internet service registration having a client-specified communications proxy and transmitting metadata to the client regarding the communications proxy.

Applicants respectfully submit that the matching of a service provider adapter servlet with the service provider, according to a protocol of the service provider, as illustrated in blocks 502-506 of FIG. 5, as well as the matching of a client request protocol adapter servlet with a client according to a client request protocol, as shown in process blocks 702-706 of FIG. 7 of Graham, fail to disclose each of the recited features of the claimed subject matter.

Specifically, as shown by process block 506, the receipt of the service provider protocol advertisement does not include metadata regarding at least one communications proxy. Furthermore, as illustrated by process block 706 of FIG. 7 of Graham, the receipt of the client request for service using the client request protocol does not disclose the receipt of a request to locate a client-desired Internet service having a client-specified communication proxy type.

Hence, Applicants respectfully submit that the matching of a service provider with a service provider adapter servlet and the matching of a client with a client protocol adapter servlet, as taught by Graham, fail to disclose each and every feature of the claimed subject matter. However, the case law is clear in establishing that each and every element of the claim must be exactly disclosed in the anticipatory reference. *Id.* Therefore, a *prima facie* case of anticipation of Claims 13-16 has not been established and the rejection of Claims 13-16 is therefore erroneous. *Id.*

## 2. Specific Limitations Not Described in the Prior Art

Claim 13 recites:

receiving at least one Internet service registration that includes metadata regarding at least one communication proxy;  
receiving a request to locate a client-desired Internet service having a client-specified communication proxy type;  
matching the request with the Internet service registration to identify a communications proxy of the communication proxy type; and  
transmitting metadata to the client, the metadata including at least a location of the identified communication proxy. (Emphasis added.)

## 3. Explanation Why Such Limitations Render the Claims Unanticipated by the Prior Art

Here, Graham fails to disclose the matching of a request to locate a client-desired Internet service with an Internet service having a client-specified communications proxy type and the transmitting of metadata to the client, including a location of the identified communications proxy, as recited by Claim 13. In contrast, Graham teaches a client protocol adapter servlet, which provides a client lookup mechanism to identify a service that matches a client-specified request.

For at least the reasons indicated above, the client request, as illustrated in FIG. 7, process block 706 of Graham, fails to include a client-specified communications proxy type. Furthermore, the receipt of a service provider protocol advertisement, as illustrated in process block

506 of FIG. 5 of Graham, fails to disclose metadata regarding at least one communication proxy, as recited by Claim 13.

Hence, although the client lookup mechanism provided by the client adapter servlet, as taught by Graham, matches an Internet service registration with a service matching a client request, as specifically taught by Graham:

In accordance with a preferred embodiment of the present invention, the protocols of the requester client and the service provider are unimportant. In the present invention, a client may have a protocol which is the same as or different from that of the service provider because an interaction between the client and service provider is brokered in a protocol-independent registry 402. (col. 6, lines 12-18.) (Emphasis added.)

As further described by Graham, the mechanism of client service provider interaction is performed by the client protocol adapter servlet:

Associated with the client lookup mechanism is the ability to broker the mechanism of client service provider interaction . . . [T]he client protocol adapter servlet broker an interchange mechanism between the requester client and the service provider. (col. 7, lines 32-34.) (Emphasis added.)

Accordingly, Applicants respectfully submit that the teachings of Graham are expressly limited to client protocol adapter servlets to perform a client lookup mechanism and the service provider adapter servlets to convert service advertisements received from service providers into a canonical representation within a registry to provide:

[S]olutions to allow interoperability of devices and service that implement different discovery protocols. (col. 2, lines 20-21.)

Applicants respectfully submit that providing interoperability of devices and services that implement different service discovery protocols by using a client protocol adapter servlet, a service provider protocol adapter servlet and enhanced registry, as taught by Graham, fail to disclose each and every element of the claimed subject. However, the case law is clear in establishing that each and every element of the claim must be exactly disclosed by the anticipatory reference. *Id.*

Consequently, Applicants respectfully submit that the failure of Graham to disclose each and every element recited by Claim 13 prohibits the Examiner's use of Graham as an anticipatory reference to establish a *prima facie* case of anticipation of Claim 13. *Id.*

Therefore, Applicants respectfully submit that a *prima facie* case of anticipation of Claims 13-16 is not established and the rejection of Claims 13-16 is erroneous and should be overturned. Accordingly, Applicants respectfully request that the §102(e) rejection of Claims 13-16 be overturned.

E. Rejection of Claims 8, 9 and 20 as Anticipated by Graham

The Examiner rejected all pending claims, including Claims 8, 9 and 20 under 35 U.S.C. §102(e) as being anticipated by Graham.

1. Errors of Law and Fact in the Rejection

The Examiner has made the same errors as previously described with respect to the rejection of Claims 6, 7, 10-12 and 17-19. Furthermore, although the Examiner has rejected Claims 8, 9 and 20 as anticipated by Graham, the Examiner fails to show that each and every element of the claimed subject matter is disclosed in Graham, as required to establish a *prima facie* case of anticipation. Id.

According to the Examiner, Graham (col. 9, lines 17-30) discloses that even though the client and the requested service on the service provider may be running at different protocols, the information is exchanged between the two dynamically. (See, pg. 8, third paragraph of Final Office Action mailed November 12, 2004.) However, after careful review of the relevant portions of Graham cited by the Examiner, Applicants respectfully disagree with the Examiner's contention.

Applicants respectfully submit that the passage of Graham cited by the Examiner (col. 9, lines 17-30) describes the client lookup mechanism performed by the client protocol adapter servlet. As indicated by the cited passage:

Using the canonical representation of the client-requested service, the internal registry may be searched for an advertisement for the requested service from a service provider. A check is made to determine whether the requested service is available in the index of the internal registry (step 710). (See, col. 9, lines 21-26.) (Emphasis added.)

Applicants respectfully submit that the client lookup mechanism described in the above-recited passage fails to disclose that "even though the client and the requested service on the service provider may be running at different protocols, the information is exchanged between the two dynamically," as suggested by the Examiner. Hence, Applicants respectfully submit that performing of the client lookup mechanism by the client protocol adapter servlet, as taught by Graham, fails to disclose dynamically interacting with the web server using the downloaded communication proxy to receive the desired Internet service, as recited by the claimed subject matter.

Consequently, the client lookup mechanism performed by the client protocol adapter servlet, as taught by Graham, fails to disclose the dynamic interaction with a web server using a downloaded communication proxy to receive a desired Internet service, as recited by the claimed subject matter.

Hence, Applicants respectfully submit that the client lookup mechanism, as taught by Graham, fails to disclose each and every element of the claimed subject matter. However, the

case law is clear in establishing that each and every element of the claim must be exactly disclosed in the anticipatory reference. *Id.* Therefore, a *prima facie* case of anticipation of the claimed subject matter is not established, and the rejection of Claims 8, 9 and 20 is therefore erroneous. *Id.*

2. Specific Limitations Not Described in the Prior Art

Claims 8, 9 and 20 recite analogous claim features. Claim 9 is representative. Claim 9 recites dynamically interacting.

3. Explanation Why Such Limitations Render the Claims Unanticipated by the Prior Art

Here, Graham fails to disclose dynamically interacting with a web server using a downloaded communication proxy to receive a desired Internet service, as recited by the claimed subject matter. As indicated by Applicants' specification:

In an embodiment, the client downloads the requested communication proxy and dynamically interacts, at runtime, with an Internet service using the requested communication proxy, the communication proxy being local to the client. In an embodiment of the invention, a client application is executing, and during runtime the client is interacting with the communications proxy. By "dynamically interact" it is meant, in an embodiment of the invention, that the client has no prior knowledge of what is needed to interact with an Internet service. In an embodiment of the invention, the client is relieved from having to develop a remote communications code. (*See*, pg. 3, ¶005 of Applicants' specification.) (Emphasis added.)

Based on the cited passage above, Applicants respectfully submit that the recited claim features of the claimed subject matter are directed toward the interaction mechanism between a matching client and service in order for the client to receive the desired service from the service provider. Conversely, the teachings of Graham are expressly limited to providing:

[S]olutions to allow interoperability of devices and services that implement different service discovery protocols. (col. 2, lines 20-21.) (Emphasis added.)

To this end, Graham teaches a client protocol adapter servlet, which performs a client lookup mechanism to match a client request with a service provider advertisement. (*See*, col. 9, lines 17-30.) Furthermore, Graham teaches the service provider protocol adapter servlet, which converts a service provider advertisement into a canonical representation; the client protocol adapter servlet and the service protocol adapter servlet enable interoperability between clients and services having different discovery protocols. (*See*, col. 6, lines 42-57.)

However, beyond the client lookup mechanism using canonical representations contained in the internal registry 402, as taught by Graham, Graham fails to disclose any teachings regarding the subsequent interaction between a matched client and service provider; and to this end, merely states that:

[A]ssociated with the client lookup mechanism is the ability to broker the mechanism of client-service provider interaction. (col. 7, lines 17-19.) (Emphasis added.)

To this end, Graham teaches that:

[T]he client protocol adapter servlet brokers an interchange mechanism between the requester client and the service provider. (col. 7, lines 32-34.)

Accordingly, beyond mentioning that the client protocol adapter servlet brokers the interchange mechanism, the only further mention within Graham of this interchange mechanism is provided in an example, wherein Graham discloses:

[I]t is the responsibility of the client servlet to generate a marshalledObject (analogous to a network device driver) that has an implementation of the appropriate Java interface corresponding to LPR:. (col. 7, lines 22-26.) (Emphasis added.) (Emphasis added.)

The responsibility described by the client servlet to generate the marshalledObject is provided in conjunction with an example of client service provider interaction as follows:

In the case of brokering a UpnP-based service to a Jini client, this is accomplished by providing a Java interface and implementation based on the Service-Name: protocol associated with the service provider to the requesting client. (col. 7, lines 34-38.) (Emphasis added.)

Beyond the above-described example, Graham is silent and therefore fails to disclose any further action between the client and service provider. In spite of the lack of any disclosure regarding a dynamic interchange mechanism between a client and service provider using a communications protocol provided by a service provider that matches a client-specified communications proxy type, as recited by the claimed subject matter, the Examiner incorrectly finds that Graham discloses each and every element of Claims 8, 9 and 20.

However, the case law is clear in establishing that each and every element must be disclosed in the anticipatory reference. Id. Hence, Applicants respectfully submit that the failure of Graham to disclose each and every element recited by Claims 8, 9 and 20 prohibits the Examiner's use of Graham as an anticipatory reference to establish a *prima facie* case of anticipation of Claims 8, 9 and 20. Id.

Therefore, Applicants respectfully submit that a *prima facie* case of anticipation of Claims 8, 9 and 20 is not established, and the rejection of Claims 8, 9 and 20 is erroneous and should be overturned. Accordingly, Applicants respectfully request that the §102(e) rejection of Claims 8, 9 and 20 be overturned.

**VIII. CONCLUSION AND RELIEF**

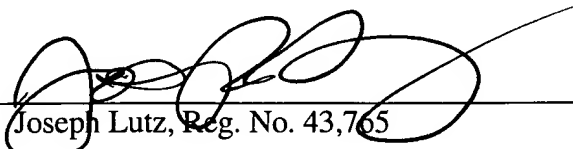
Based on the foregoing, Applicant requests that the Board overturn the rejection of all pending claims and hold that all of the claims of the present application are allowable.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

Dated: April 8, 2005

By: \_\_\_\_\_

  
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**CERTIFICATE OF MAILING:**

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April 8, 2005

Marilyn Bass

  
\_\_\_\_\_  
April 8, 2005



## **IX. APPENDIX**

The claims involved in this Appeal are as follows:

1. A method comprising:  
registering an Internet service with a broker;  
transmitting metadata, to the broker, describing at least one communication proxy, including at least one supported protocol, a type, and a location of the communication proxy; and  
accessing, by the communication proxy, a web server to provide the Internet service to a client if the type of the communication proxy matches a communication proxy type specified by the client.
2. The method as in claim 1, further comprises:  
downloading the communication proxy from the location to a node local to the client.
3. The method as in claim 1, wherein the type of the communication proxy is one of Java, common language runtime (CLR), component object model (COM), and Win32 binaries.
4. The method as in claim 1, wherein the at least one supported protocol of the communication proxy includes at least one of hypertext transfer protocol (HTTP), simple mail transfer protocol (SMTP), simple object access protocol (SOAP), secure sockets layer (SSL/HTTPS), and secure HTTP (S-HTTP).
5. The method as in claim 1, wherein the communication proxy is compatible with the client environment if the type of the communication proxy matches a communication proxy type specified by the client and the supported protocol of the communication proxy matches an application-level protocol specified by the client.
6. A method comprising:  
requesting a desired Internet service, by a client, to a broker, including a desired communication proxy type and, optionally, a desired application-level protocol;  
receiving metadata from the broker regarding a communication proxy having at least a matching communication proxy type to the desired communication proxy type;  
downloading the communication proxy from a location specified by the metadata; and  
interacting with a web server using the downloaded communication proxy to receive the desired Internet service.

7. The method as in claim 6, wherein the communication proxy supports the desired application-level protocol.

8. The method as in claim 6, wherein interacting further comprises:  
remotely accessing the web server by the downloaded communication proxy according to the client.

9. The method as in claim 6, wherein interacting comprises:  
dynamic interacting.

10. The method as in claim 6, wherein receiving metadata comprises:  
obtaining one of extensible markup language (XML), hyper text markup language (html), text file, and binary.

11. The method as in claim 6, wherein the desired communication proxy type is one of Java, common language runtime (CLR), component object model (COM), and Win32 binaries.

12. The method as in claim 6, wherein the desired application-level protocol is one of hypertext transfer protocol (HTTP), simple mail transfer protocol (SMTP), simple object access protocol (SOAP), secure sockets layer (SSL/HTTPS), and secure HTTP (S-HTTP).

13. A method comprising:  
receiving at least one Internet service registration that includes metadata regarding at least one communication proxy;  
receiving a request to locate a client-desired Internet service having a client-specified communication proxy type;  
matching the request with the Internet service registration to identify a communications proxy of the communication proxy type; and  
transmitting metadata to the client, the metadata including at least a location of the identified communication proxy.

14. The method as in claim 13, wherein receiving said metadata comprises:  
obtaining descriptions of at least one supported protocol, a type, and a location of the communication proxy.

15. The method as in claim 13, wherein receiving said metadata comprises:  
obtaining one of extensible markup language (XML), hypertext markup language (html),  
text file, and binary.

16. The method as in claim 14, wherein the communication proxy type is at least one of  
Java, common language runtime (CLR), component object model (COM), and Win32 binaries; and  
wherein a supported protocol of the communication proxy includes at least one of hypertext  
transfer protocol (HTTP), simple mail transfer protocol (SMTP), simple object access protocol  
(SOAP), secure sockets layer (SSL/HTTPS), and secure HTTP (S-HTTP).

17. A machine readable medium having instructions which when executed by a machine  
cause said machine to perform operations comprising:

requesting a desired Internet service, to a broker, including a desired communication proxy  
type;

receiving metadata from the broker regarding a communication proxy having at least a  
matching communication proxy type to the desired communication proxy type;

downloading the communication proxy from a location specified by the metadata; and

interacting with a web server using the downloaded communication proxy to receive the  
desired Internet service.

18. The machine readable medium as in claim 17, wherein the downloaded  
communication proxy supports a specified application-level protocol.

19. The machine readable medium as in claim 17, wherein interacting is accomplished at  
runtime.

20. The machine readable medium as in claim 17, wherein interacting comprises:  
dynamic interacting.

21. (Cancelled)